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ABSTRACT

This is a report on a research project which developed an evaluative model for a Kindergarten through Grade 2 bilingual education program in the Prosser School District in the state of Washington, a program that had been in operation for three years. The report is divided as follows: (1) background information on the program; (2) a summary of the project goals; (3) the model of classroom instruction; (4) a general summary of the gains in language proficiency among the groups evaluated; (5) the groups tested; (6) the characteristics of the evaluative model, a "norm-referenced model"; (7) results of the analyses; and (8) recommendations. The groups tested were currently enrolled second, third and fourth grade Hispanic and non-Hispanic students. The results are organized according to the three basic skill areas: reading, language arts and mathematics. Results indicated gains in all groups in reading and language arts achievement. Hispanic students showed little or no gain in mathematical achievement; all groups of non-Hispanic students did show progress in mathematical achievement. The recommendation was that the district should continue the project and seriously consider extending it upward. (AMH)

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FOREWORD

This research monograph on the bilingual program of one district is very much appreciated by SIRS, since dissemination of this material is for use at the local level and we feel that certain aspects of this study could be implemented by any school district involved in the bilingual problem.

We feel it is adaptable to that segment of the marketplace that has to meet the educational needs of children from Spanish language background who have limited proficiency in the English language.

Murray A. Taylor, Executive Director
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The Prosser School District in coordination with North West Regional Educational Laboratory in Portland, Oregon, completed an evaluation of the district's Regional Title VII ESEA project. The on-going project has always been considered a success by those students, parents and educators who participated in the program.

Our rationale in bringing in a third party evaluator was to establish a clear evaluative model that would validate both the Prosser Project and hopefully, other bilingual programs. It is important to express the district's gratitude to Robert Silverman from the Laboratory and Dr. Brian Talbot from ESD 105 in Yakima.

The complete (97 page) evaluation document may be reviewed by contacting the Prosser School District.

Background Information

In the fall of 1975 the Prosser School District commenced its participation in a Title VII ESEA funded consortium which was created to provide services to non- and limited-English speaking students in the Yakima Valley. The project is coordinated through the Educational Service District No. 105 and currently includes the following school districts: Toppenish, Yakima, Grandview and Sunnyside.

Rationale

The major purpose of this project is to implement an effective elementary bilingual-bicultural program designed to meet the educational needs of children from Spanish language backgrounds* who have limited proficiency in the English language. Such children have traditionally failed to perform well academically in public schools; have consequently become statistics on school drop-out rates; and have ultimately, as adults, become beneficiaries of the welfare system.

Bilingual Education is an instructional program which is designed to facilitate the linguistically different student's learning of academic skills, concepts and the English language through the use of both the student's native language and English as mediums of instruction. The instruction is also designed to maintain and strengthen the sense of identity and self concept of students from non-English speaking backgrounds.

Bilingual Education also provides for the voluntary participation of Non-Hispanic youngsters in the classroom instructional process. These students are afforded the opportunity to learn a second language and to gain an understanding and appreciation of an additional cultural heritage. Instruction is conducted in such a manner that the educational needs of both groups of children are addressed.

Need

The Yakima Valley is located in the south central part of the state of Washington. It is a part of the 4th Congressional District. This District has the highest number and percentage of individuals of Spanish language background, of persons of "farm worker" job classification and of families with incomes below the poverty level. Approximately 20% of the students in the Prosser School District come from Spanish language backgrounds.

Hispanic students are characterized by their teachers as typically coming from homes where:

- Mostly Spanish is spoken and there are definite cultural differences
- There is a low education level
- There is a lack of exposure to educational materials
- There is a migratory work background
- There is an interest in securing educational services for their children
- The students are further described as being shy, initially frightened by the school atmosphere, socially immature but generally eager to learn.

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* These children will be referred to as Hispanic students in the remainder of the report.

Through questionnaires and interviews, parents and teachers in the Prosser District have identified special needs in the children of Hispanic language backgrounds. Teachers of Spanish-speaking students describe many of these students as requiring "survival English skills" and emphasize their need to understand instruction in English without the use of interpreters. Additional needs of Hispanic students are described by their classroom teachers as follows:

- o Oral English language skills (listening and speaking)
- o Written English skills (reading and writing)
- o Content area skills (math, conceptual development)
- o Maintenance of positive self esteem

In an effort to develop an educational alternative to previous district programs and to be more responsive to the individual needs of Prosser's Hispanic population, a Bilingual Education Project was pursued. Table 3 describes the major project goals which guide and direct the activities carried out by all project staff.

Table 3

Major Project Goals

For Hispanic Students

(1) Provide an opportunity to begin and continue the learning process utilizing the child's most familiar language both in concept development and in content area instruction.

(2) Develop the English language skills of the student.

(3) Provide the necessary skills for the child to participate in full range of activities provided in the building.

(4) Recognize and give value to the cultural background of the student.

For Non-Hispanic Students

(5) Provide an opportunity to learn a second language.

(6) Provide an opportunity to become acquainted with another culture.

For Both Groups (all students)

(7) Provide an atmosphere in which students will learn respect and tolerance for individual differences and varied lifestyles.

Classroom Instruction

The model utilized by the Prosser School District for classroom instruction includes the use of one teacher and one instructional aide per classroom. There are four self-contained instructional units at the kindergarten through second grade levels. In addition, each student participating in the project receives instruction in Spanish Language Arts from the Resource Teacher and/or a teacher aide in another classroom for a designated period of time each day. (Instructional time varies with grade level and developmental level.)

The breakdown of instructional responsibilities for each individual working with the students in the project is as follows:

Classroom Teacher

- Teach the regular school curriculum in English;
- Where expertise allows, teach the regular school curriculum in the dominant language of the student;
- Teach English as a second language to students lacking English language proficiency;
- Provide a learning atmosphere conducive to the appreciation and understanding of cultural differences

Instructional Aide

- Assist the classroom teacher by teaching portions of regular school curriculum in the dominant language of the student;
- Tutor and reinforce concepts and lessons taught by the teacher in the dominant language of the student;
- Prepare instructional materials for teacher;
- Assist resource teacher in Spanish language instruction (small groups)

Resource Teacher

- Instruct Spanish language dominant students in Spanish Language Arts;
- Instruct English language dominant students in Spanish as a second language

Instructional Objectives. The major instructional objectives for the non and limited-English speakers as described by the classroom teachers are listed below. These objectives exist in addition to the regular district objectives in each subject area for each grade level.

Kindergarten

- Teach basic concepts (shapes, colors, counting, size relationships);
- Develop oral language skills in English;
- Develop oral language skills in Spanish;
- Teach appreciation of another culture

First Grade

- Teach English as a second language to insure that the student understands basic instruction in English;
- Develop oral language skills in Spanish;
- Introduce limited English speaking students to English reading;
- Develop reading skills in Spanish;
- Teach content area skills according to regular district curriculum using student's dominant language;

- Teach students about other cultures in order to develop their acceptance and appreciation for individual differences

Second Grade

- Teach English as a second language to insure that the student has an English vocabulary consistent with his/her age group;
- Develop reading skills in Spanish (short paragraphs);
- Develop reading skills in English as close to grade level as possible;
- Teach content area skills according to regular district curriculum using student's cominant language;
- Teach students about other cultures in order to develop their acceptance and appreication for individual differences.

General Summary

Qualitative gains were made by students within grade levels. At the pre-test only one kindergartner, two first graders and 10 second graders were classified as near or totally fluent in English. As a contrast, at the post-test, two kindergartners, six first graders and 17 second graders were classified as near or totally fluent in English. The increase in the number of students within these classifications is almost 100%.

The oral English language proficiency of Hispanic students in grades K-2 is increasing. From pre-test to post-test, significant gains were made by students at all grade levels. While not all students are totally proficient in English, the results indicate the longer students are enrolled in the project, the more proficient in English they become. In addition to gains in overall oral language proficiency, gains in the quality and amount of English language used by most students at the post-test also were observed.

The greatest oral English strengths of Hispanic students in third and fourth grades were in the areas of vocabulary and sentence comprehension. While the majority of the students were able to reproduce an English story with native-like fluency, one-third made systematic errors in grammar and fact and 15% were able to produce only phrases and single sentences. Finally, these students generally were able to respond to the oral English tasks of the LAS with more success than Hispanic students in grades K-2.

Groups Tested

The three groups used for these analyses are:

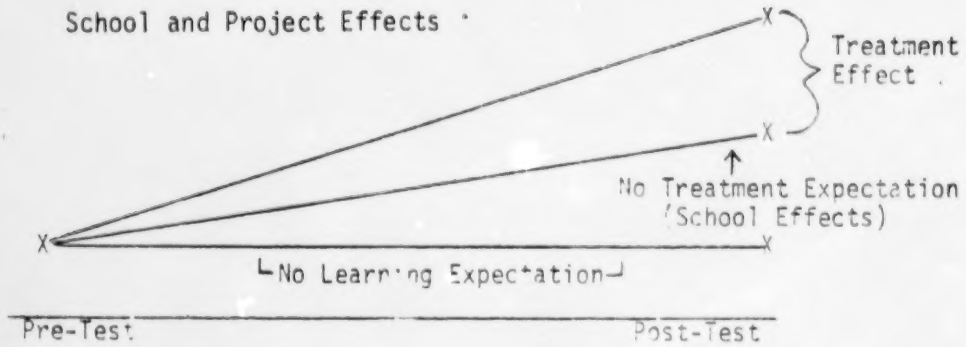
1. Currently enrolled fourth grade students (1978-79) who were enrolled in the project as first graders in 1975-76 and were enrolled in the project as second graders in 1976-77.
2. Currently enrolled third grade students (1978-79) who were enrolled in the project as first graders in 1976-77 and were enrolled in the project as second graders in 1977-78.
3. Currently enrolled second grade students (1978-79) who were enrolled in the project as first graders in 1977-78.

Additionally, since a number of students who would have been in third and fourth grades have left the Prosser School system, their scores were included in separate analyses as well.

Characteristics of Model Used

The model used to analyze the results from the achievement testing tries to answer the question, "How much more did pupils learn by participating in the project than they would have learned without it?" As applied to this evaluation, the model seeks to answer the question of what impact the Bilingual Project has had on the basic achievement of Hispanic and Non-Hispanic students enrolled in the project. The effect of the treatment (in this case the Bilingual Project) is defined as the difference between observed post-treatment performance (post-test scores) and an estimate of what that performance would have been without the project.

For this evaluation, the estimate of what student performance would have been without the project is that students would maintain at post-testing the same achievement status with respect to a national norm group as they had at pre-testing. The expectation is not that students would not learn anything over time. Rather, the expectation is that in the absence of any special programming, students will maintain their status relative to the national norming group. Figure 6 graphically displays the expectation of the model.



Expected School and Project Effects
Figure 6

As Figure 6 displayes, the no treatment expectation implies that raw scores will increase over time, but that students' percentile rankings would remain the same. Thus, students' scoring at the 50th percentile on the pre-test would also be expected to score at the 50th percentile on the post-test in the absence of any special projects. Given the existence of a special project, like the Bilingual Project, one way to investigate its impact is to see if the actual percentile levels of students increase over the course of the project. Parenthetically, this model generally is labeled a "Norm-Referenced" evaluation model and currently is being used in 90% of Title I evaluations nationally.

Results of Analyses

Given the fact that 10 separate analyses were computed for each of the three basic skills areas totalling 30 separate findings, a discussion of each separate finding would be unmanageable. Therefore, the results presented here are general in nature and descriptive of general patterns in the results. Tabular information which more fully elaborates this general discussion can be found in Appendices J, K and L for reading, language arts and mathematics, respectively.

The results are organized into each of the three basic skill areas: reading, language arts and mathematics. For each basic skill area the groups who were assessed also are identified. Finally, the educational significance of the changes in scores is identified for each group. As there is some disagreement among evaluators regarding what changes should be considered educationally significant, a middle-ground was adopted in this report. Three categories of change are identified: large, moderate and none.

Reading Achievement Results. Both Hispanic and Non-Hispanic students made significant gains in reading between the first and second grades. For Hispanic students, four of the five gains are moderate in size and one is large. For Non-Hispanic students, three gains are large and two are moderate. Table 32 displays the results of the SRA Reading Test.

Language Arts Achievement Test Results. The results from the Language Arts Achievement Test for each group are displayed in Table 33. Large gains were made by both Hispanic and Non-Hispanic students in four of the five groups. When currently enrolled fourth grade students and exited fourth grade students were combined, the observed gain was moderate.

Mathematics Achievement Test Results. Table 34 includes the results from the Mathematics Achievement Testing for each group of students. Hispanic students generally did not make gains in achievement in mathematics. Four out of the five groups made no gains. All groups of Non-Hispanic students made gains in mathematics, with this year's second grade class making large gains and the other groups making moderate gains.

RECOMMENDATIONS

This section includes a discussion of two policy level recommendations that can be made as a result of the evaluation. Additionally, recommendations for project improvement in the four areas of project management and coordination, classroom instruction, parent involvement and evaluation are made.

Policy Recommendations

Based on the results of the testing, two policy level recommendations can be made:

- o The Bilingual Project should be continued in kindergarten through second grade.
- o The District should give serious consideration to expanding the project upward to include students in higher grades.

In the following discussion, the conclusions which led to these recommendations are presented.

Rationale for Continuing the Bilingual Project

There are two major reasons for continuing the Bilingual Project in grades K-2. First, there are a significant number of students who enter the district in grades K-2 who are non- or limited English speaking and, therefore, have a need for educational programming which is appropriate for them. Second, the project as it now exists is having a positive impact on all groups of students who are enrolled.

Characteristics of Students. Approximately 20% of the students in the District come from Spanish language backgrounds. Many of these children do not speak English upon entering school. Most of them also come from families with incomes below the poverty level. Typically, low income is coupled with low educational level and a lack of exposure to educational materials in the home. Such students enter school substantially behind their English speaking peers in English language development, mathematics skills and conceptual development.

Program Impact. At all grade levels, Hispanic students in the project are making gains in their oral English proficiency. The longer students are enrolled in the project, the more dramatic the results become. While most students in kindergarten are limited speakers of English, the majority of students in second grade have gained fluency in English. Within grade levels, students made impressive gains as well. From pre-test to

post-test, gains made by students were statistically significant. At the post-test, an increase of approximately 100% was observed in the numbers of students who were near fluent or totally fluent in English.

Most Hispanic and Non-Hispanic students in the project made gains in their oral Spanish proficiency as well. Hispanic students generally are learning more Spanish; significant gains were made by students at each grade level. Such gains are valuable because they lay the foundation for continued learning in content areas while English language skills are being built. Importantly, Non-Hispanic students also are learning Spanish. Although the students as a group do not, as yet, approach fluency in Spanish, they demonstrated that they are learning the building blocks of the language (vocabulary and comprehension) which ultimately lead to fluency.

Finally, both Hispanic and Non-Hispanic students who have been in the project made significant gains between first and second grades in the basic skills areas of reading and language arts. While this finding is positive in itself, it is particularly important as it demonstrates that the project is having a positive effect on students at varying achievement levels. Both initially high and low achievers are benefiting from the project. In first grade, Hispanic students scored appreciably lower than Non-Hispanic students on both subtests. The median percentile rankings for Hispanic students was 25, for Non-Hispanic the median was 54. In spite of these initial achievement differences, both groups made significant gains and benefited from the project.

Rationale for Expanding the Project

There are three major reasons for expanding the Bilingual Project upward to include higher grades: 1) the performance of students at the end of second grade; 2) the performance of students in third and fourth grades; and 3) the evidence that suggests that there may be many other students in the district whose needs are not being addressed.

Performance of Second Graders. Although the majority of Hispanic students in second grade were approaching fluency in English at the post-test, a significant minority were not. Four students were limited English speakers and four were non-English speakers. These students have made gains in English over the course of the project and most likely would continue to make additional progress if their specific language needs are addressed.

Hispanic students who are fluent in English also would benefit from the extension of the project. For the most part, their scores indicate that they are skilled in both oral English and oral Spanish. By extending the project, their dual language skills could be built upon and used to facilitate knowledge acquisition in content areas as well. The fact that they already have demonstrated significant gains in reading and language arts is demonstrative of the effectiveness of bilingual programming for Hispanic students.

Finally, by virtue of their being in the Bilingual Project, Hispanic students have increased their oral Spanish facility. If they remained in a bilingual project, students could continue to develop these skills and the possibility of their forgetting the language would be diminished.

Non-Hispanic students demonstrated that they, too, have learned some Spanish. However, without continued instruction in Spanish, they most likely will forget most of what they ave learned. This ultimate loss of knowledge seems to result in an undue waste of resources, both in terms of student, teacher and administrative time as well as dollars spent.

Non-Hispanic second grade students have made significant gains in reading and language arts. This fact is demonstrative of the effectiveness of bilingual programming for Non-Hispanic students. Something special is happening in the Bilingual Project. It seems worth pursuing.

Performance of Third and Fourth Graders. Of the students who were previously in the project, eight Hispanic students (47%) in third grade and five (50) in fourth grade were not able to retell an English story with native-like fluency. These students would definitely benefit from additional assistance. The language arts achievement scores of fourth grade students corroborate this point. When they were in first and second grades, this year's fourth grade students made large gains in language arts. However, between second and fourth grades the percentile rankings of seven of the nine (78%) students who took the test dropped. Seemingly, the regular program is not as successful as the Bilingual Project in impacting student performance in language arts.

Similar results were found in reading. Between first and second grades, observed gains were large. However, between second and fourth grades, the percentile ranking of six of the eight (75%) students dropped. Again, the Bilingual Project seems to have had a more positive impact.

While the rankings in language arts and reading for Hispanic students were declining in fourth grade, the percentile rankings of Non-Hispanic students generally reamined the same or increased. Educational programming in third and fourth grades appears better suited for these students than for Hispanic students.

Non-Hispanic students do remember some of the Spanish they learned while enrolled in the project. However, the pattern of the scores obtained from K-4 indicates that students in grades 3 and 4 have forgotten some of what they learned. Without additional Spanish instruction, as more time elapses, they probably will forget most of what they learned.

Needs of Other Students. An anecdotal incident further supports the need for bilingual programming in upper grades. During the attitude testing conducted in January, one of the randomly selected students from the third and fourth grade comparison group did not understand any English. In fact, one of the bilingual students in the testing group had to translate the test items so that this student could be tested.

This incident raises a serious question about the number of other students throughout the district who enter grades 3 through 12 with limited skills in English. While the existing Bilingual Project services children in grades K-2 have been examined in this report, it is beyond the scope of this evaluation to report the types of services being provided to similar students in upper grades.

Each school district has a responsibility to provide educational services appropriate to the needs of every enrolled student. Recently that responsibility has been highlighted and given national attention through legal proceedings at the federal, state and local levels.